

**REMARKS**

In the Office Action claims 1 and 2 were rejected as anticipated under 35 USC 102(e) by US 2002/0006374, and claims 3-14 were rejected under 35 USC 103(a) as unpatentably obvious over WO 2004/018093 in view of US 2002/0006374.

**Rejection under 35 USC 102 (e):**

The Office Action suggested that the '374 patent application publication discloses a chromium-based catalyst having a nominal composition of  $\text{Ni}_{0.01}\text{Cr}_{0.99}\text{O}_x$ . (Example 20 was cited). The Office Action noted that the catalyst is prepared by a final calcination step at 350° C, and suggested that this results in the formation of a crystalline  $\alpha$ -chromium oxide phase.

Applicants submit that nothing in '374 patent application publication states that the catalysts therein have crystalline  $\alpha$ -chromium oxide phases. Applicants note that instead, paragraph [104] clearly indicates that the  $\text{Co}_{0.2}\text{Cr}_{0.8}\text{O}_x$  catalysts therein comprise a mixture of  $\text{CoCr}_2\text{O}_4$  cubic spinel phase and a  $\text{Cr}_2\text{O}_3$  eskolaite phase and further suggests that after use, Co metal may be formed. Applicants submit that the nickel analog suggested by this disclosure would comprise a mixture of  $\text{NiCr}_2\text{O}_4$  cubic spinel phase and a  $\text{Cr}_2\text{O}_3$  eskolaite phase. In contrast, the crystalline alpha-chromium oxide of Claim 1 and the catalyst composition of Claim 2 in the current application involve a crystalline  $\alpha$ -chromium oxide lattice wherein the indicated atom percent of the chromium atoms in the alpha-chromium oxide lattice are substituted by nickel.

Applicants further submit that the catalyst preparation method suggested by Example 20 in the '374 patent application publication is very different from the method described in the present application. Even the calcination temperature in Example 20 of '374 patent application publication is 350° C, whereas the calcination temperature described in the current application is from about 375° C to about 1000° C (see page 8, lines 16-17).

Thus, Applicant respectfully submits that this Example 20 of the '374 patent application publication cannot fairly be found to anticipate claims 1 and 2 of the present application.

**Rejection under 35 USC 103 (a):**

The Office Action suggested that the one skilled in the art would be motivated to substitute the WO '093 catalyst with the catalyst of the '374 patent application publication because they have similar morphology and both are bimetallic metal oxide catalysts and therefore one would expect to obtain similar results by substituting one catalyst for the other.

As discussed above, Applicants submit that the '374 patent application publication does not fairly teach the crystalline alpha-chromium oxide of Claim 1 or the catalyst composition of Claim 2 of the current application. Moreover, WO '093 discloses replacing certain atom percentages of chromium atoms in an alpha-chromium oxide lattice with trivalent cobalt atoms, whereas the cobalt in the  $\text{CoCr}_2\text{O}_4$  cubic spinel phase included in the mixture of  $\text{CoCr}_2\text{O}_4$  cubic spinel phase and a  $\text{Cr}_2\text{O}_3$  eskolaite phase discussed in the '374 patent application publication is clearly divalent. Accordingly, Applicants submit that the teachings of the WO '093 and '374 patent application publication cannot be fairly combined to render claims 3-14 obvious.

In view of the foregoing, allowance of the above-referenced application is respectfully requested.

Respectfully submitted,

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